



Armed Forces College of Medicine AFCM



Neoplastic Diseases of ach

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Prof. of Pathology



INTENDED LEARNING OBJECTIVES (ILO)



By the end of this lecture you will

- Classify gastric tumors
- Summarize pathology and complications of most common gastric tumor (adenoma /gastric carcinoma)
- Compare gastric malignant ulcer and peptic ulcer
- Describe pathology of other gastric tumors (lymphoma /GIST/Carcinoid)
- Classify causes of hematemesis.
- Correlate pathologic features of neoplastic gastric lesions with their clinical picture and complications

Lecture Plan



1. Part 1 (10 mins): Classification of gastric tumours & gastric adenoma
2. Part 2 (20 mins) :Gastric carcinoma
3. Part 3 (15):Gastric lymphoma -carcinoid -GIST
4. Lecture Quiz (5 min)

Gastric Tumours



Benign

Adenoma
Leiomyoma
Gastrointestinal
stromal tumor
.(GIST)
Others

Malignant

.Carcinoma
Lymphoma
.GIST
.Carcinoid
.Sarcoma

Benign Gastric Tumours



Adenomatous polyp:

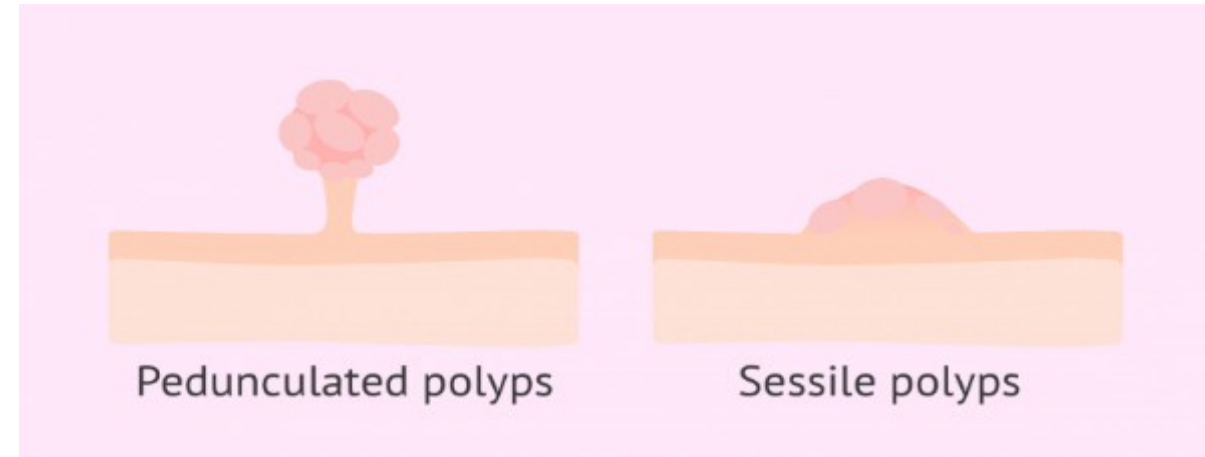
Gross: Sessile, pedunculated.

Microscopic:

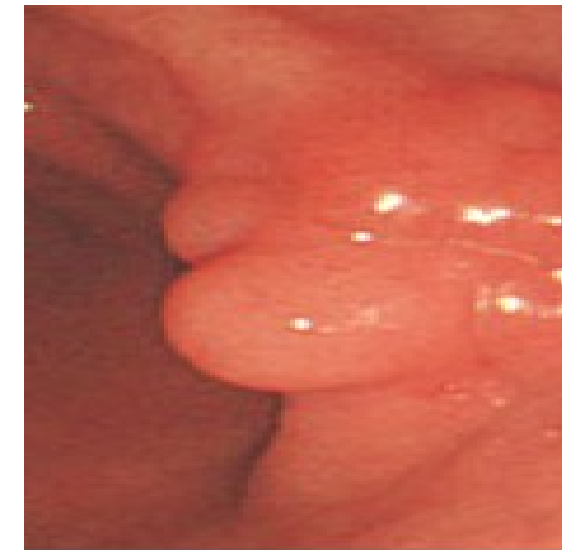
Proliferated glands showing dysplasia.

Effects:

- 1-Precancerous
- 2-Hematemesis
- 3-Pyloric obstruction.



<https://www.invitro.com/en/wp-content/uploads/2016/01/types-of-endometrial-polyps-780x332.png>



https://www.gastrointestinalatlas.com/%2Fenglish/%2Fgastric_polyps_ii.html&psig=AOvVaw0Pz3XVyVcnjgUDty2ML1cz&ust=1595485099665000&source=images&cd=vfe&ved=0CAIQjRxqFwoTClQwKib4OoCFQAAAAAAdAAAAABAs

https://www.researchgate.net/profile/Gregory_Lauwers/publication/24407283/figure/fig2/AS:267475052920904@1440782430700/An-adenomatous-polypa-An-endoscopic-view-showing-a-velvety-surface-b-A-low-power.png

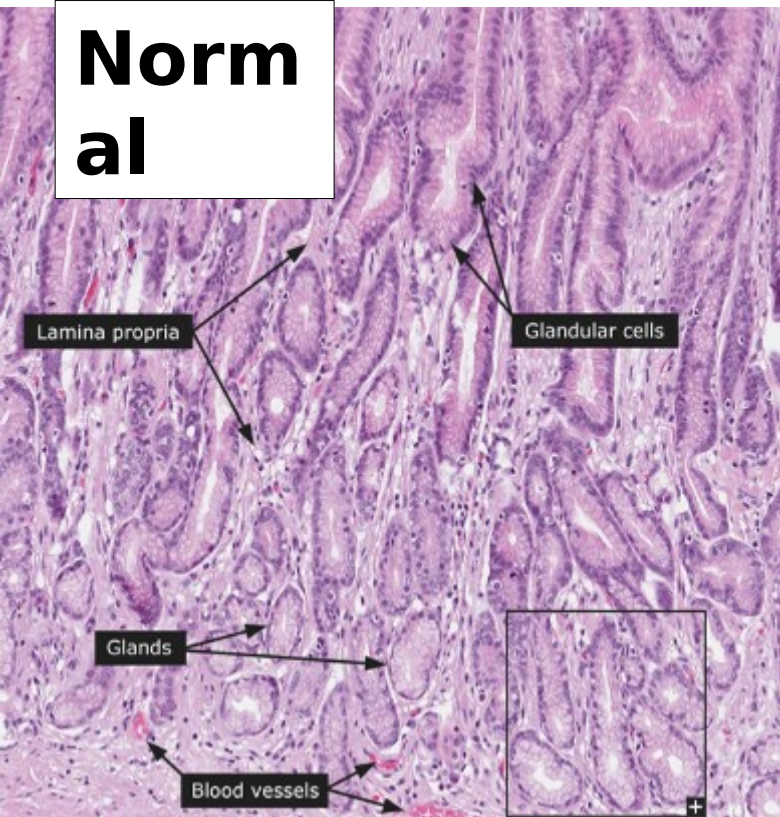
Benign Gastric Tumours



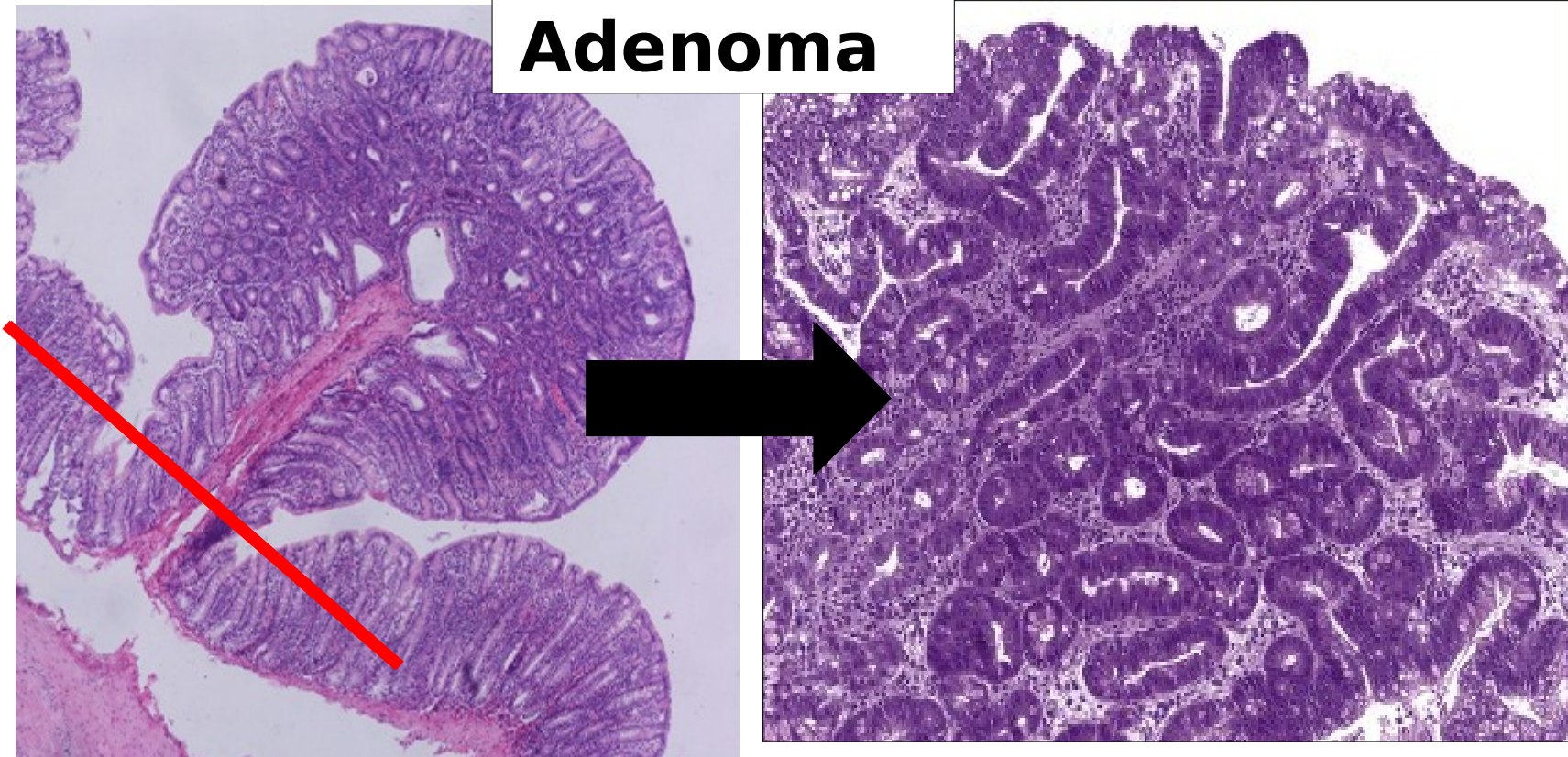
Adenomatous polyp

Compare

Normal



Adenoma



Benign Gastric Tumours (Quiz)



Regarding adenomatous polyp ,state which of the following is true or false

- It is precancerous
- It doesn't show dysplasia
- It is an inflammatory lesion

Benign Gastric Tumours (Quiz)



Regarding adenomatous polyp ,state which of the following is true or false

- It is precancerous **T**
- It doesn't show dysplasia **F :It must show a degree of dysplasia at least low grade**
- It is an inflammatory lesion **F :It is a benign tumour and precancerous**

Gastric Carcinoma

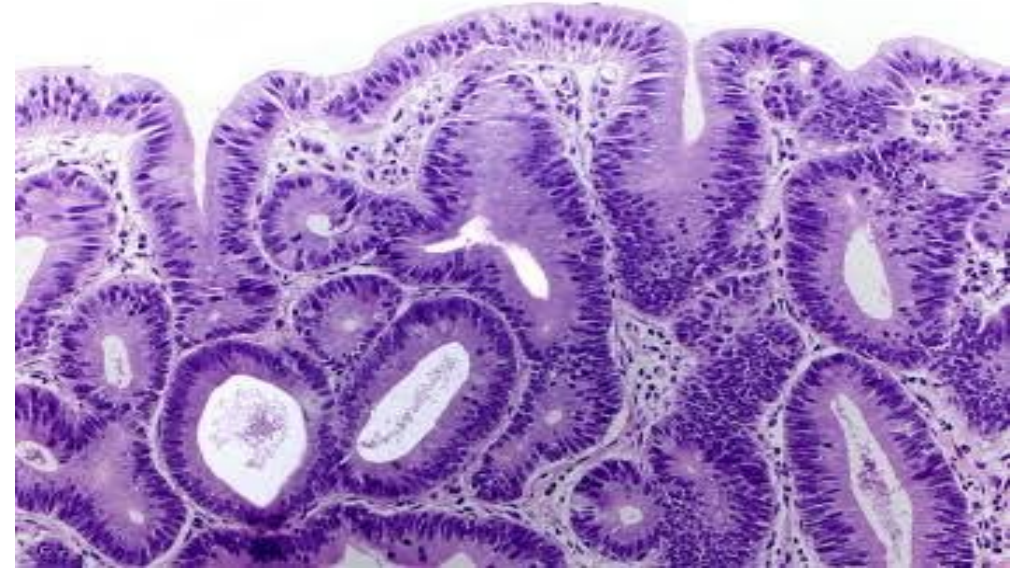


Pdf:

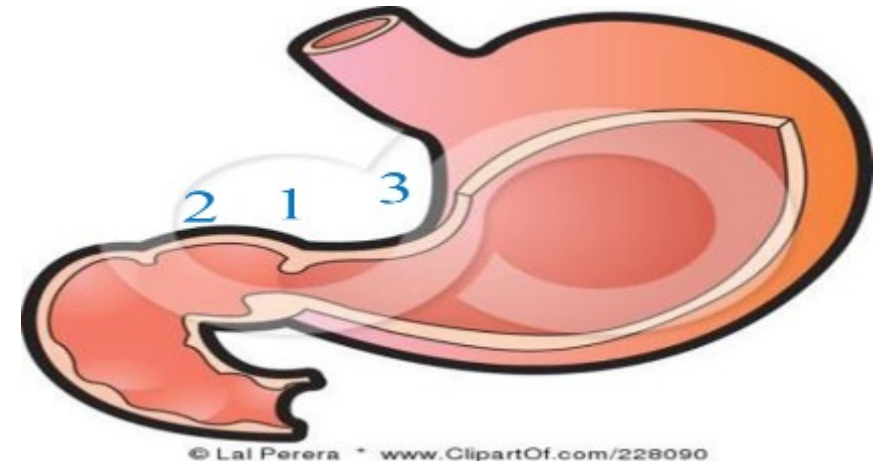
- Chronic gastritis.
- Adenomatous polyp.
- Diet: Smoked and salted foods (Food containing nitrites).
- Gastric peptic ulcer :can give rise to carcinoma in only 1%.

Site:

1. Prepyloric
2. Pyloric antrum
3. lesser curvature



http://www.med.nu.ac.th/Pathology/patho_knowledge/file/Gastrical.pdf



© Lal Perera * www.ClipartOf.com/228090

Gastric Carcinoma



C/P:

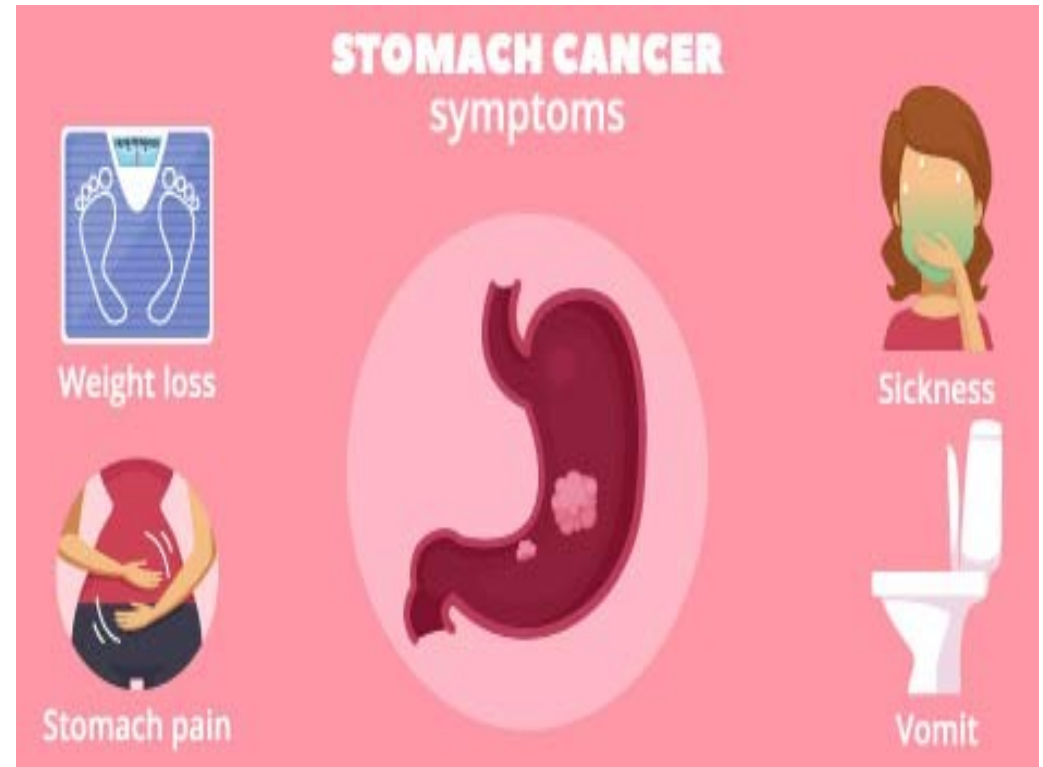
A- Early cases: like those of gastritis.

B- Advanced cases:

1- Hematemesis ,Melena and Anaemia

2- Pyloric obstruction>> vomiting

3- Weight loss, anorexia.



https://www.indushealthplus.com/media/article_img/stomach-cancer-signs-symptoms-th



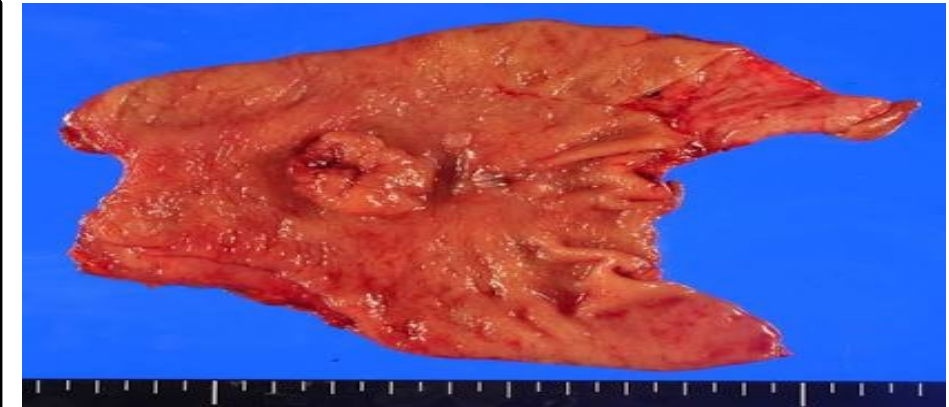
Gastric carcinoma



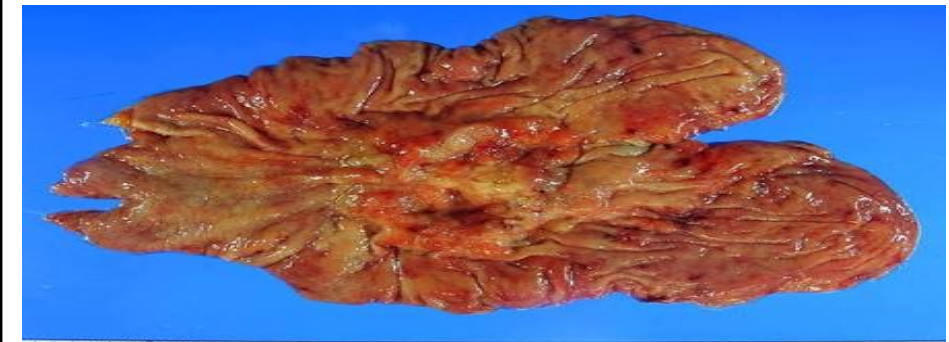
Gross

- Fungating Mass
- Malignant ulcer
- Infiltrating mass :
 - Localized: → Pyloric Stenosis
 - Diffuse: →
 - ❖ Thickening of entire gastric wall
 - ❖ Stomach converted into rigid short tube

leather-bottle stomach = Linitis plastica
Occurs more v
carcinoma



<https://www.intechopen.com/media/chapter/41894/media/image9.jpeg>



<https://www.intechopen.com/media/chapter/41894/media/image11.jpeg>



<https://d1yboe6750e2cu.cloudfront.net/i/cf627cebb02f3dd6208eeb4b003ed82812100dcf>

1-

Gastric Carcinoma



shape

lined by cells showing criteria of malignancy

2- Muroid carcinoma:

Tumor cells and acini in extracellular

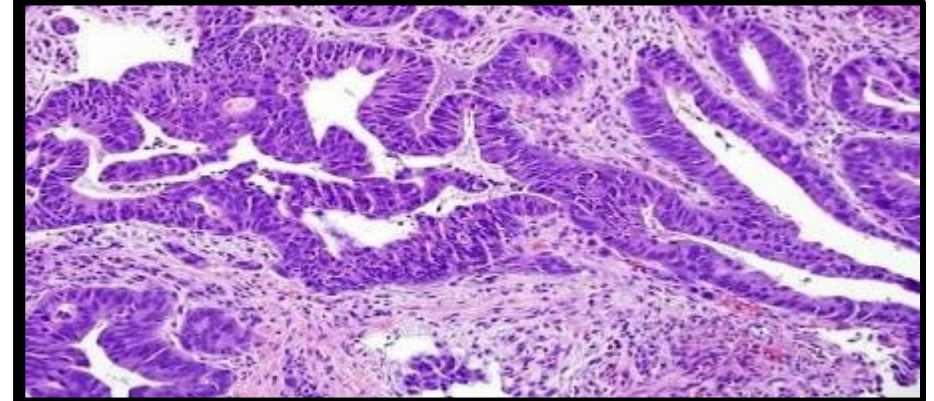
mucinous pools (pale blue material) forming >50% of tumour tissue

3- Signet-ring cell carcinoma

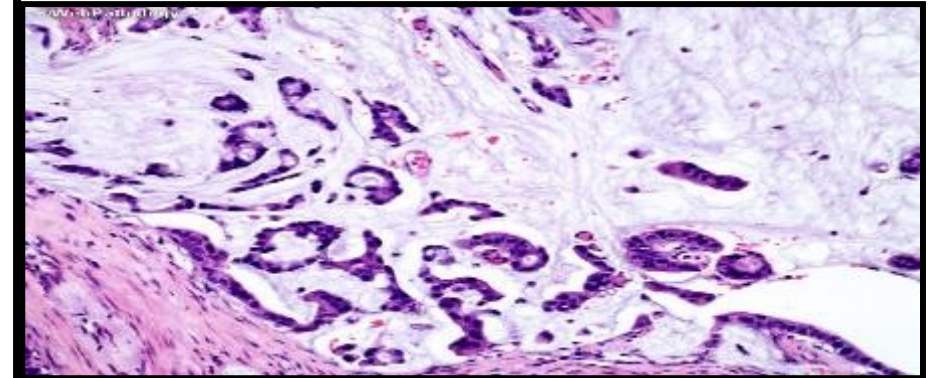
Diffuse infiltration by clear cells with

intracellular mucin and eccentric nucleus

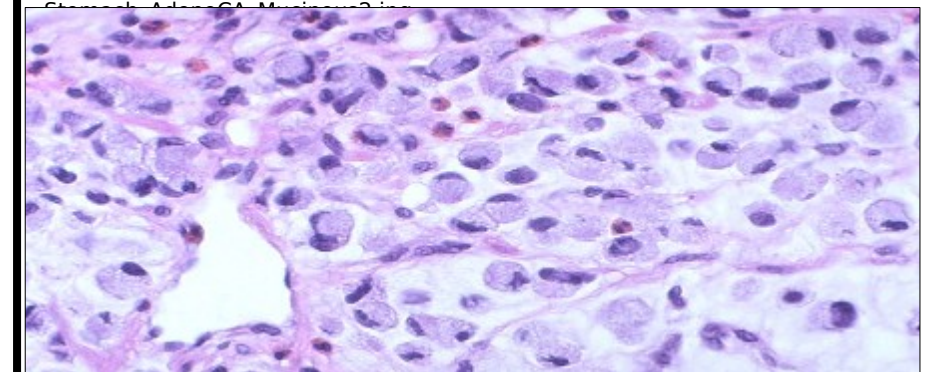
forming >50% of tumour tissue



https://live.staticflickr.com/3476/3990475712_79fde2eb78.jpg



<https://www.webpathology.com/slides-13/slides/Signet-Ring-Cell-Carcinoma-Gastric-Mucosa-2.jpg>



<https://webpath.med.utah.edu/jpeg4/GI029.jpg>

Gastric Carcinoma



Spread

- 1- Local direct spread to surroundings.
- 2- Lymphatic spread to:
 - a. **Regional gastric** and distant lymph nodes.
 - b. Lymph node metastasis may involve a supraclavicular lymph node (**Virchow node**).
- 3- Blood spread: mainly **liver** through portal V
- 4- Transcelomic spread in females to **both ovaries**.



<https://clinipedia.files.wordpress.com/2013/08/troisiers-sign-2>



https://upload.wikimedia.org/wikipedia/commons/b/be/Krukenberg_tumor_-1.jpg

Gastric Carcinoma



Most powerful prognostic indicators : TNM stage depends on :

- Depth of invasion (T)
- Extent of Nodal invasion(N)
- Extent of distant metastasis(M)

Gastric Carcinoma (Quiz)

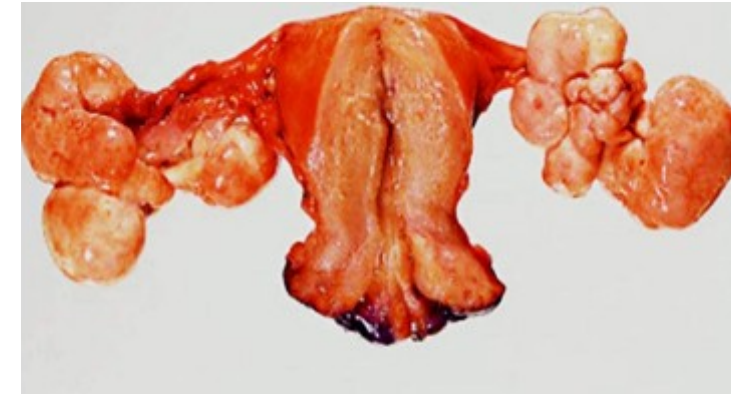


Name these signs that may associate gastric carcinomas

Linitis plastica

Virchow's node

Krukenberg tumor



<https://d1yboe6750e2cu.cloudfront.net/i/af627eebb02f3dd6398eeb4b903ed82812190dcf>

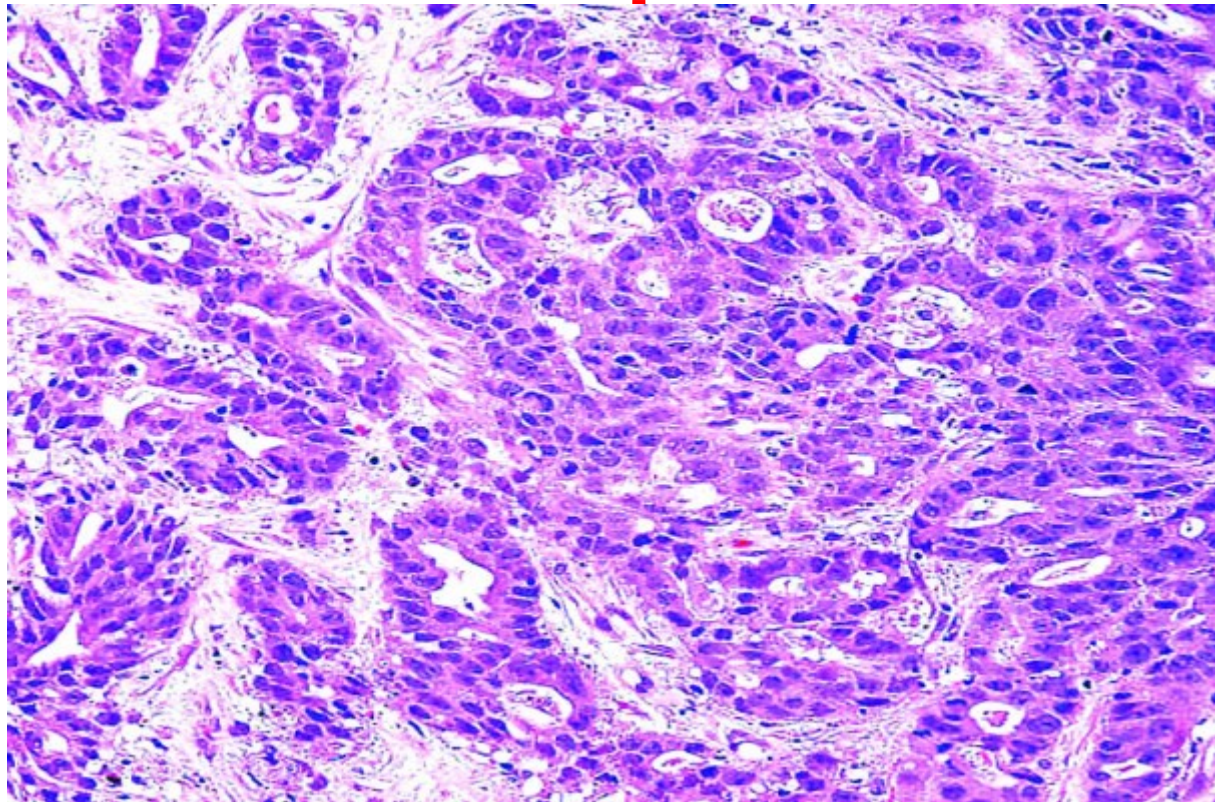
https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcTq0wh_15sg6pP-ApwP6LU1pZ87L9O4JeVcHCS57xsTDuVTRli&s

<https://slideplayer.com/slide/10314107/35/images/25/Krukenberg+tumors+ovary.jpg>

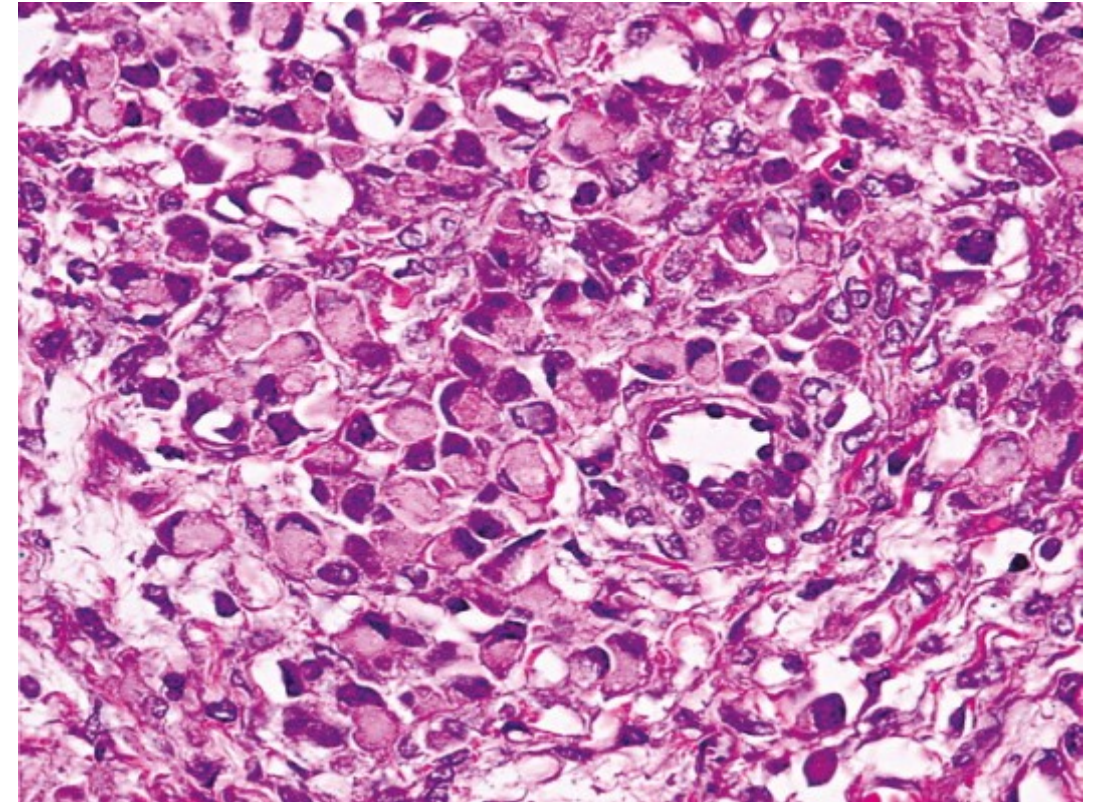
Gastric Carcinoma (Quiz)



Identify these gastric carcinoma



<http://www.pathologyoutlines.com/wick/esophagus%20adenocarcinoma%20in%20barrett%20metaplasia%20micro.jpg>



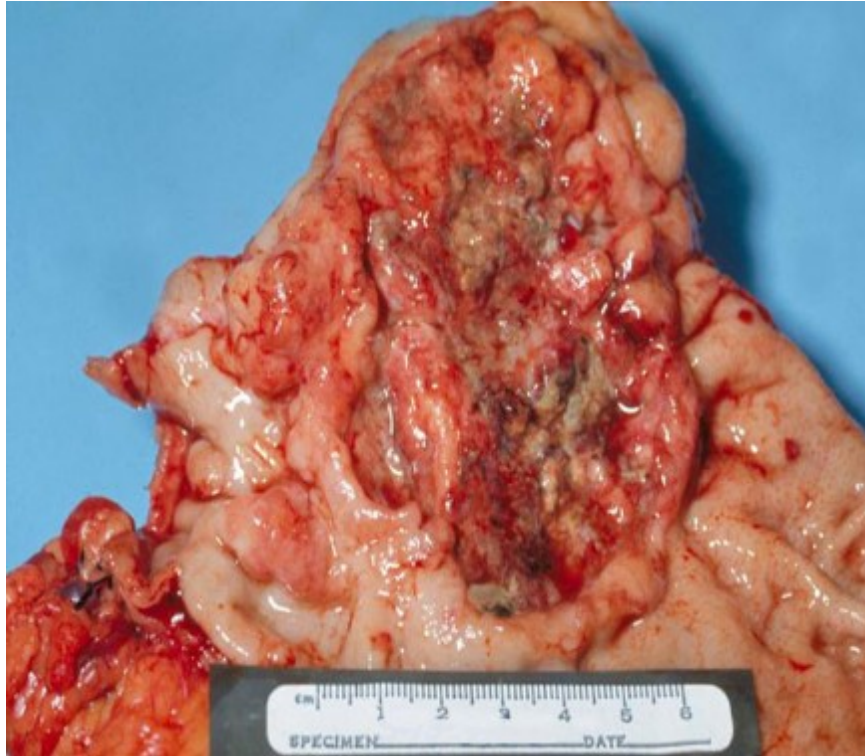
• <https://ars.els-cdn.com/content/image/3-s2.0-B9780443069208500183-gr18.jpg>

Adenocarcinoma
Signet-ring cell carcinoma.

GIT & Metabolism module

Chronic Peptic Ulcer Versus Malignant Ulcer

Compare



https://cdn.bitlanders.com/users/galleries/280802/Stage_Iv_Gastric_Cancer-3_fa_rszd.jpg

Malignant Ulcer



https://upload.wikimedia.org/wikipedia/commons/thumb/f/f1/Benign_gastric_ulcer_1.jpg/260px-Benign_gastric_ulcer_1.jpg

Peptic Ulcer

Chronic Peptic Ulcer Versus Malignant Ulcer

	Malignant Gastric Ulcer	Chronic Peptic Ulcer
Margin	irregular	Rounded , oval
Edge	Irregular , everted	Sharp ,clear cut
Floor	Necrotic, hemorrhagic	Clean
Base	Indurated, firm due to tumour invasion.	firm due to fibrosis
Microscopic	Malignant acini, lined by malignant cells with	Debris , fibrin , inflammatory cells, granulation

Gastric Lymphoma

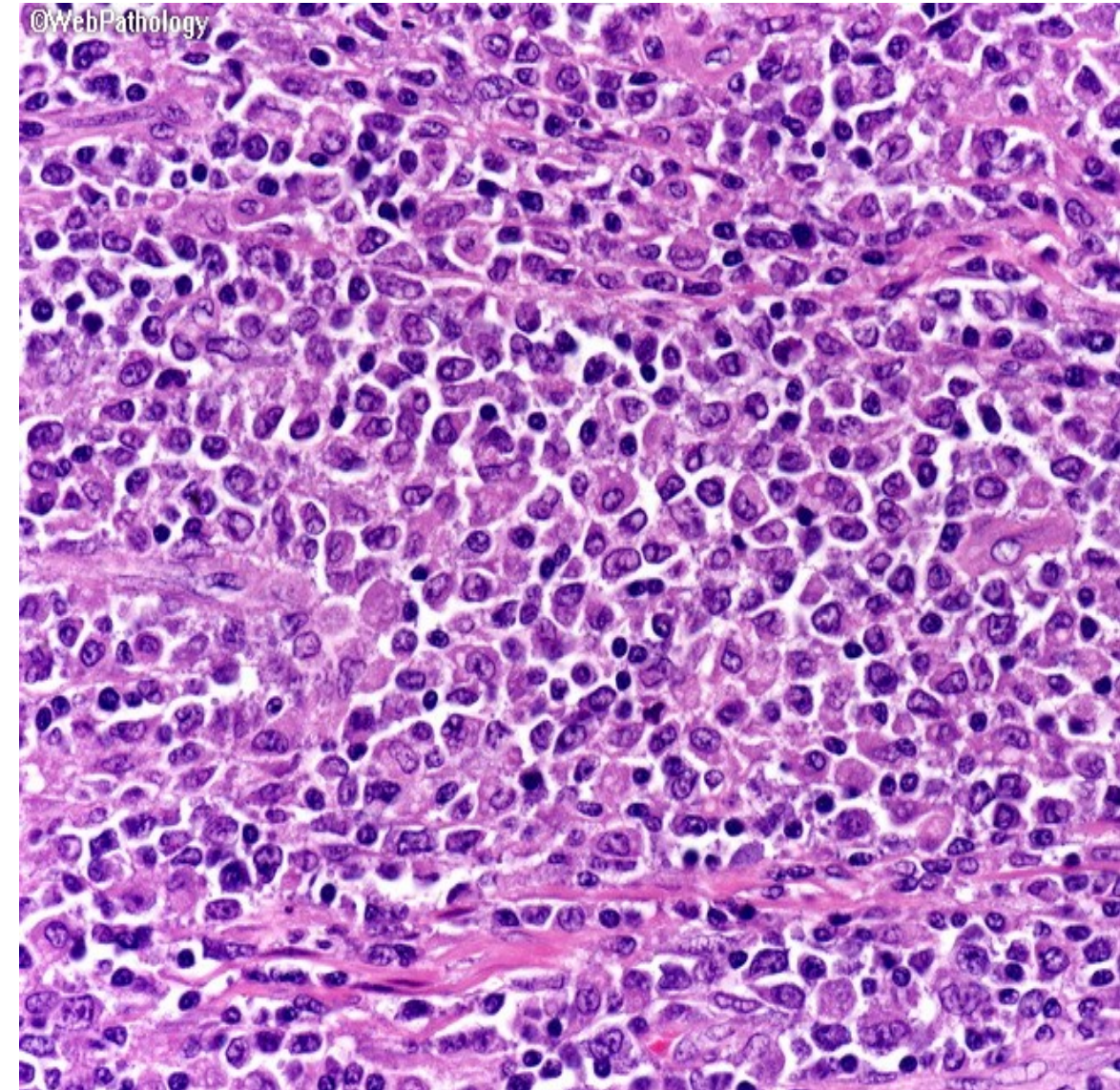
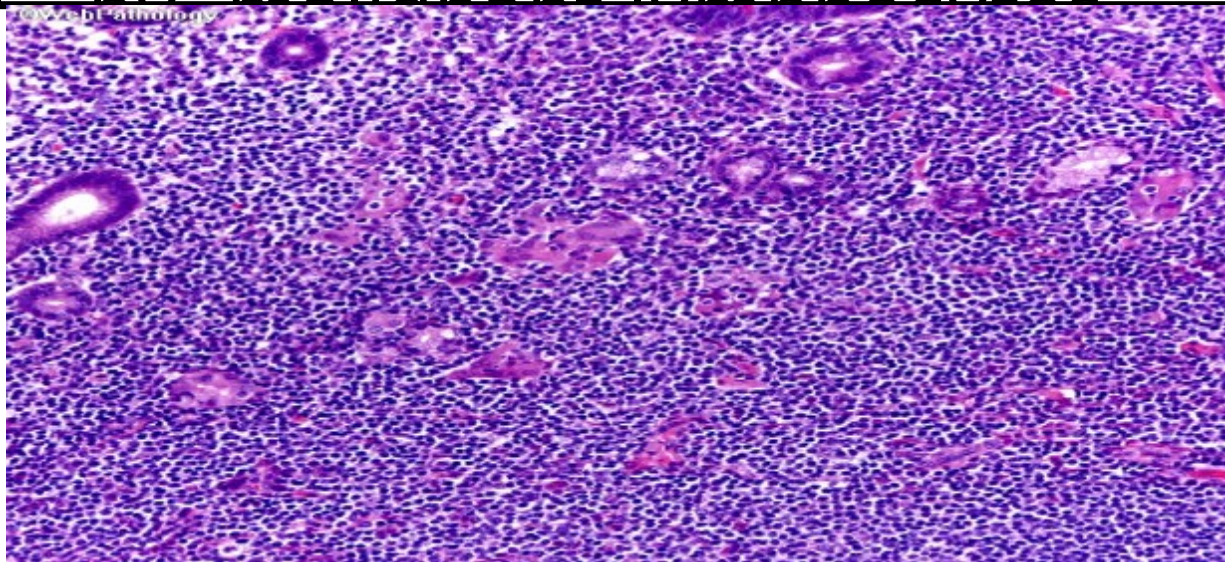


Incidence & Type

- Next in frequency after carcinoma

Mic

- Diffuse infiltration of mucosa & wall



Gastro Intestinal Stromal Tumor (GIST)



Nature :

Classified as benign or malignant according to

- Tumor size
- Mitotic activity.

Incidence:

Most common mesenchymal tumor of stomach.

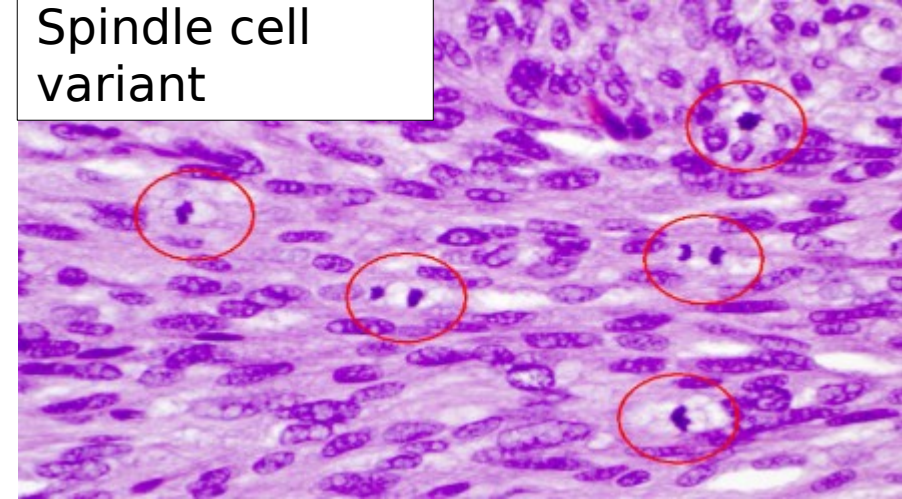
Origin:

Interstitial cells of Cajal

Mic :

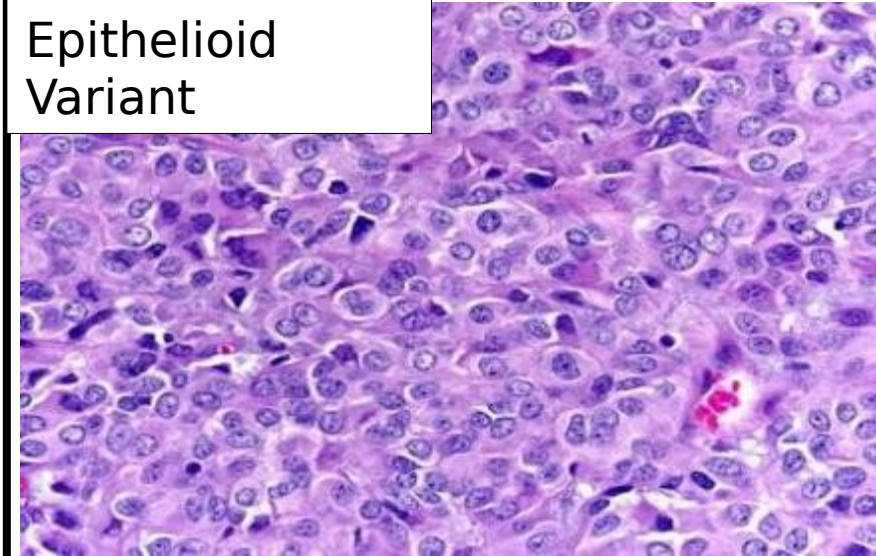
- Submucosa mass
- formed of spindle and /or epithelioid cells

Spindle cell variant



<https://www.gistsupport.org/media/Understanding%20Pathology%20Report/mitoses-marked-575pix.jpg>

Epithelioid Variant



<https://image.slidesharecdn.com/gistppt-180805184023/95/gastrointestinal-stromal-tumors-17-638.jpg?cb=1533494877>



Gastric Carcinoid

Origin:

Neuroendocrine cells of GIT
(Argentaffin cells)

Gross:

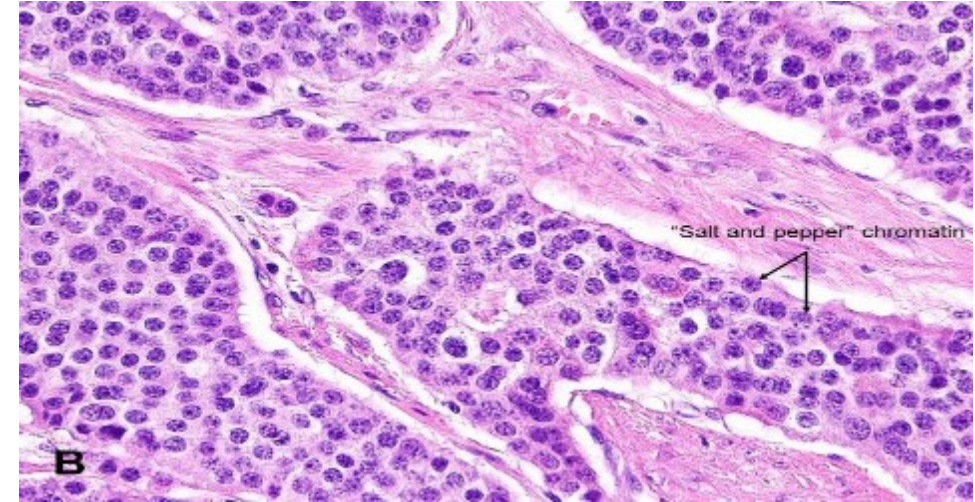
Intramural or intra-mucosal polypoid masses

Mic :

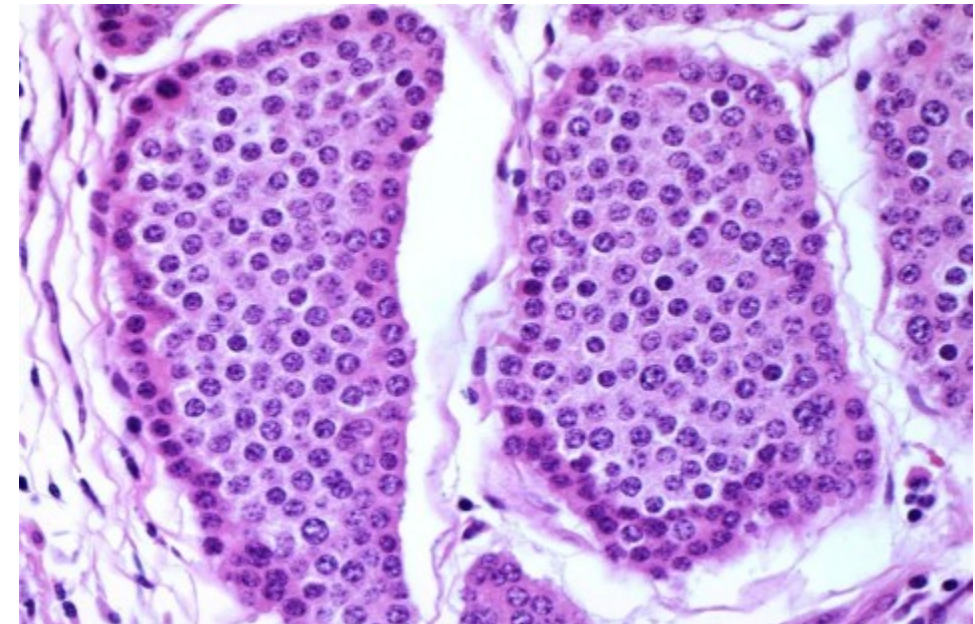
- Islands , glands and sheets of
- Uniform cells
- Granular cytoplasm
- Stippled nuclei
- IHC: **Chromogranin**

Prognosis depends on

- Grade



https://www.auanet.org/images/education/pathology/testis-germ/carcinoid_tumor-figureB_Big.jpg



<https://prod-images.static.radiopaedia.org/images/16246162-b12311007612051d3-55e3-0b24a.jpg>

Gastric Carcinoid



C/P:

- Carcinoid confined to GIT > **5-hydroxytryptamine or serotonin** > Metabolized to inactive form in Liver > **No symptoms**
- **Metastases leads to bypass of metabolism in liver >> produce symptoms**

Thus, carcinoid syndrome occurs in less than 10% of patients and is strongly associated with metastatic disease

- **CARCinoid syndrome symptoms :**
 - **C**utaneous flushing & sweating
 - **A**sthmatic wheezing & Bronchospasm
 - **R**ight sided cardiac valvular fibrosis

Gastric Carcinoid



CARCinoid syndrome

taneous flushing & sweating



<http://encyclopedia.lubopitko-bg.com/images/Patient%20with%20metastatic%20carcinoid%20tumor.jpg>

Asthmatic wheezing & Bronchospasm



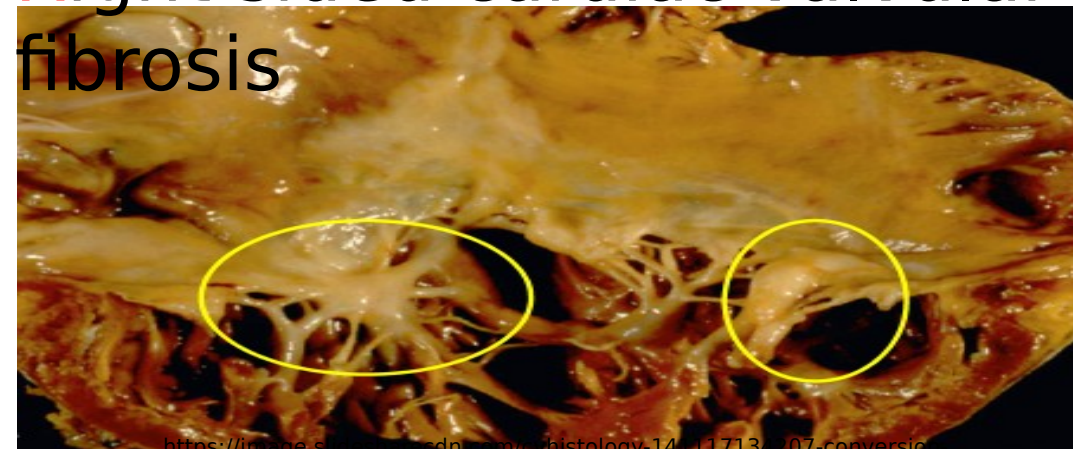
<http://www.lisleuth.com/images/wheeze.gif>

Cramping ,abdominal pain & diarrhea



<http://www.lisleuth.com/images/wheeze.gif>

Right sided cardiac valvular fibrosis



<https://image.slidesharecdn.com/cvhistology-14111713107-conversion-gate01/95/cardiovascular-histology-76-638.jpg?cb=1416231883>

Hematemesis



Def: vomiting of blood

Causes:

1. Diseases of the esophagus:

- Esophageal varices
- Carcinoma of esophagus
- Peptic ulcer of esophagus
- Rupture of aortic aneurysm into esophagus.

2. Diseases of the stomach and duodenum:

- Acute and chronic gastritis
- Peptic ulcer
- Gastric carcinoma
- Gastric erosion following ingestion of some drugs
e.g. aspirin.

3. Generalized disease: such as leukaemia,

Gastric Tumours (Quiz)



A. Gastric carcinoma

B. GIST

C. Carcinoid

1. Interstitial cells of Cajal
2. Neuroendocrine cells
3. Flushing
4. Krukenberg tumour
5. C-kit positive
6. Linitis plastica

Gastric Tumours (Quiz)



A. Gastric carcinoma **4,6**

B. GIST **1,5**

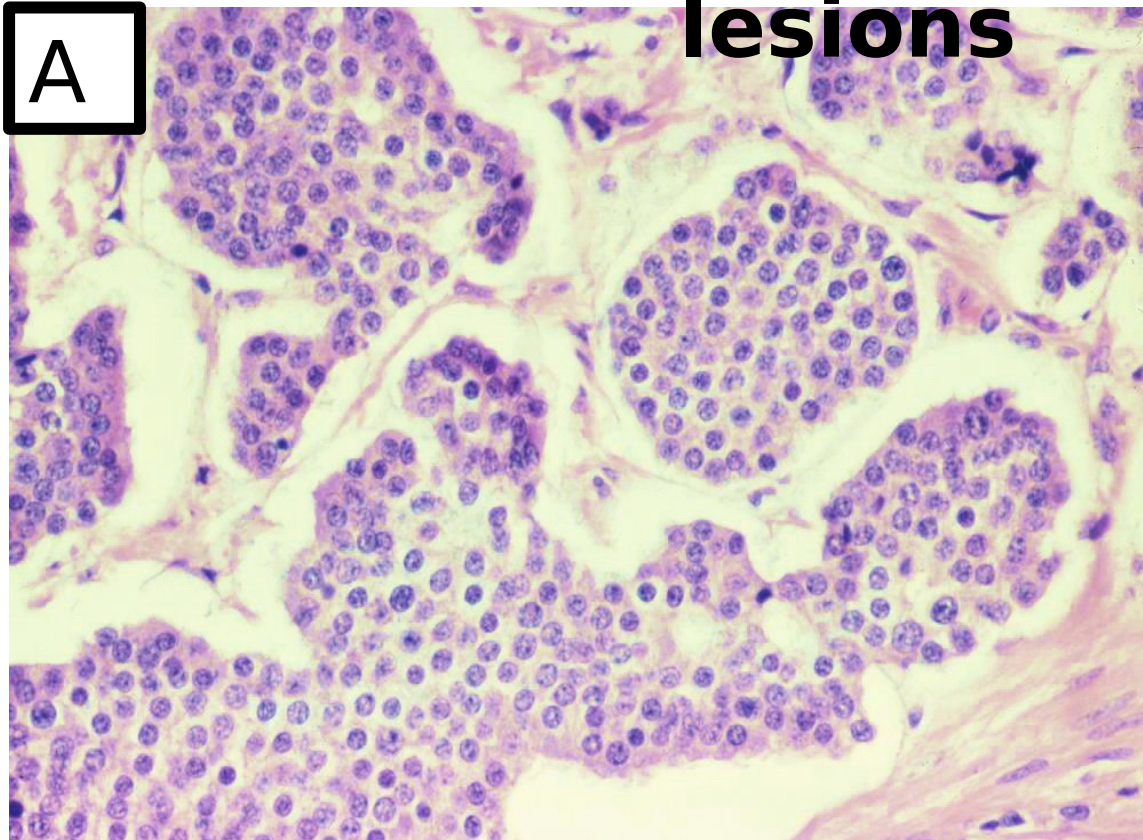
C. Carcinoid **2,3**

1. Interstitial cells of Cajal
2. Neuroendocrine cells
3. Flushing
4. Krukenberg tumour
5. C-kit positive
6. Linitis plastica

Gastric Tumours (Quiz)

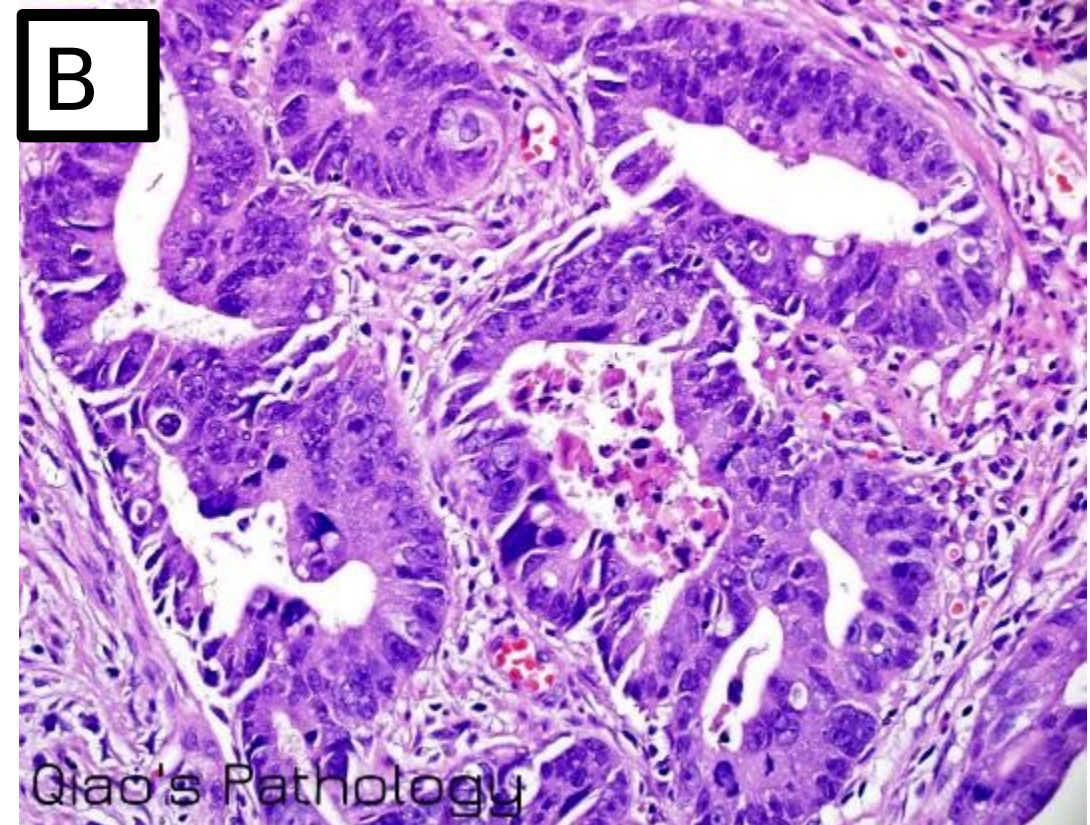


Identify these gastric lesions



Carcinoid

https://live.staticflickr.com/3420/3931156341_1b351a1ac7_b.jpg



Adenocarcinoma

https://live.staticflickr.com/8522/8027979330_4b360d27e4_b.jpg

Keypoints



- Classification of gastric tumours & gastric adenoma
- Gastric carcinoma :Predisposing factors –gross –microscopic – effects and complications
- Gastric lymphoma
- Carcinoid tumour and carcinoid syndrome –IHC
- GIST :origin –morphology –IHC

Suggested Textbooks



- Kumar V, Abbas A, Aster J : In Robbins and Cotran pathologic basis of disease, 10th edition. Elsevier Saunders. Chapter 16
- <http://library.med.utah.edu/WebPath/GIHTML/GI020.html>
- <http://www.pathologyoutlines.com/stomach.html>

